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EXAMINER

KAO, CHIH CHENG G

ART UNIT PAPER NUMBER

2882

DATE MAILED: 01/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/064,182

Applicant(s)

RAND, ROY E.

Examiner

Chih-Cheng Glen Kao

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ML

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 10/23/03. 6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings were received on 10/23/03. These drawings are acceptable.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 6-9, 11-13, 15-17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peschmann et al. (US Patent 4610021) in view of Rand et al. (US Patent 5442673).
3. With regards to claim 1, Peschmann et al. discloses a EBT scanning system (Figs. 1 and 2) comprising: an electron source (Fig. 2, #22), a single target ring (Fig. 2, #28-31), a pair of detector arrays (Fig. 2, #14, and Figs. 4A-4D) opposite the target ring, and a collimator arranged concentrically between the target ring and detector arrays, said collimator having apertures to collimate the x-ray into a first collimated beam with a first width and a second set of apertures for a second collimated beam with a second width (Fig. 5, #72, 74, 76, 78, and 80) and forming at least one of a single and double tomographic slice (Figs. 4A-4D) detected by the pair of detector arrays.

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However, Peschmann et al. does not disclose a collimator having interior and exterior walls concentrically arranged with apertures.

Rand et al. teaches a collimator having interior and exterior walls (Figs. 5A-5C, walls created by #502 and 504) concentrically arranged with apertures (Figs. 5A-5C, apertures created by #502 and 504).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the device of Peschmann et al. with the collimator of Rand et al., since one would be motivated to incorporate the collimator for lower costs and improved performance (col. 1, lines 52-57) as shown by Rand et al.

4. With regards to claims 12 and 16, Peschmann et al. further discloses a first set of apertures (Fig. 5, apertures from #78 and 80) to collimate an x-ray beam having a first width, said first beam being detected by first and second detectors when the collimator is in a first position (Fig. 6D), said first beam being detected by one of the first and second detector arrays when the collimator is in a second position (Fig. 6C), and a second set of apertures to collimate a second beam having a second width (Fig. 5, apertures from #74 and 80) said second beam being detected by the first and second detector arrays when the collimator is moved to a third position (implied from Fig. 6A using analogous collimator ring #74 instead of 78), and said collimator being moved to define the two beams having first and second width, respectively (Fig. 5, #74, 78, and 80).

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5. With regards to claims 2 and 7, Peschmann et al. further discloses a collimator being moved between first and second positions to define beams having first and second width respectively (Fig. 5, #78 and 80).

6. With regards to claims 3 and 8, Peschmann et al. further discloses the collimator moved between positions to direct the collimated beam solely onto one detector in a position and two detectors in another position (Figs. 6C and 6D).

7. With regards to claims 4, 9, 13, and 17; Peschmann et al. in view of Rand et al. suggests a device as recited above.

However, Peschmann et al. does not disclose a collimator including a detector-only region with a first and second set of post-patient apertures.

Rand et al. further teaches a collimator including a detector-only region with a first and second set of post-patient apertures (Fig. 5C).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the device of Peschmann et al. in view of Rand et al. with a detector-only region of the collimator, since one would be motivated to incorporate this for directing the x-rays towards the detector and defining the x-ray beam (Fig. 5C) as implied from by Rand et al.

8. With regards to claims 6, 11, 15, and 19, Peschmann et al. in view of Rand et al. suggests a device as recited above.

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However, Peschmann et al. does not disclose a collimator including a source-only region with a first and second set of pre-patient apertures.

Rand et al. further teaches a collimator including a source-only region with a first and second set of pre-patient apertures (Fig. 5B).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the device of Peschmann et al. in view of Rand et al. with a source-only region of the collimator, since one would be motivated to incorporate this for directing the x-rays towards the detector and defining the x-ray beam (Fig. 5A-5B) as implied from by Rand et al.

9. Claims 5, 10, 14, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peschmann et al. in view of Rand et al. as applied to claims 1, 7, 12, and 16 above, and further in view of Peschmann (US Patent 4531226).

Peschmann et al. in view of Rand et al. suggests a device as recited above.

However, Peschmann et al. does not seem to specifically disclose a collimator with a source/detector overlap with a first and second set of pre- and post-patient apertures.

Peschmann teaches a collimator with a source/detector overlap (Fig. 3). Rand et al. further teaches a first and second set of pre- and post-patient apertures (Figs. 5A-5C).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the device of Peschmann et al. in view of Rand et al. with a source/detector overlap of Peschmann, since one would be motivated to incorporate this for defining the x-rays beams from the target ring (col. 3, lines 8-15) as shown by Peschmann.

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It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the device of Peschmann et al. in view of Rand et al. with a first and second set of pre- and post-patient apertures, since one would be motivated to incorporate this for directing the x-rays towards the detector and defining the x-ray beam (Fig. 5A-5B) as implied from by Rand et al.

Response to Arguments

10. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

11. Applicant's arguments filed 10/23/03 have been fully considered but they are not persuasive.

With regards Peschmann et al. and "multiple collimators", the Examiner views the collimator rings in whole as a collimator, not multiple collimators. Secondly, it is noted that the features upon which applicant relies (i.e., "single collimator") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. Nevertheless, the collimator rings of Peschmann et al. as a whole is viewed as a single collimator, wherein a single collimator is interpreted as a single collimator structure.

With regards to Peschmann et al. and a "collimator being moved between first and second positions...", the Examiner cites Figures 6A-6D, where parts (#78 and 80) of the collimator moves (Fig. 6C and 6D), thus creating beams with widths.

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Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (571) 272-2492. The examiner can normally be reached on M - F (9 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



gk



DAVID V. BRUCE
PRIMARY EXAMINER